



PATENT

Attorney Docket No.: CIT1270-1

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Lewis and Royce Art Unit: 2813  
Application No.: 09/905,157 Examiner: E. Kielin  
Filed: July 12, 2001  
Title: ELECTRICAL PASSIVATION OF SILICON-CONTAINING SURFACES  
USING ORGANIC LAYERS

Box AF  
Commissioner of Patents  
Washington, D.C. 20231

**DECLARATION OF**  
**APPLICANT UNDER 37 C.F.R. § 1.132**

Sir:

I, Nathan S. Lewis, co-inventor of the above-identified application, do hereby declare and state that:

1. I am familiar with the above-identified patent application and the disclosure in the specification of electrical structures containing modified surfaces.

2. I have reviewed the Office Action mailed March 4, 2003, and I understand that claims 1-5, 9-11, 13-17, 21-30 have been rejected under 35 U.S.C. § 102(b), as allegedly being anticipated by Linford, et. al. (U.S. Patent No. 5,429,708) and Tsukune, et. al. (Japanese Patent No. 6-84853 A). I further understand that claim 12 has been rejected as allegedly being unpatentable over Linford in view of Aboaf, et. al. (U.S. Patent No. 3,961,353). I understand that the Examiner alleges that the cited references inherently disclose electrical structures having a silicon surface, and an organic layer chemically bonded to the surface, wherein an electrical property of the structure is significantly changed compared to a same structure without the organic layer.

3. I understand that the presently claimed invention is drawn to an electrical structure comprising a silicon-containing material having a surface, and an organic layer chemically bonded to the surface of the silicon-containing material, wherein an electrical

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property of the electrical structure is significantly improved compared to a same structure without the organic layer.

4. As depicted in the graph accompanying this Declaration (marked as Exhibit A), merely attaching an organic layer to a silicon surface does not inherently result in an electrical structure having wherein an electrical property is improved compared to a same structure without the organic layer. Specifically, the graph shows that a silicon surface modified by a method according to Linford, specifically through the use benzoyl peroxide as a radical initiator and 1-octene as the organic reactant, does not result in an electrical structure having improved properties. The graph shows that such a modified surface undergoes rapid lifetime decay upon exposure to air. Linford also specifies that some of the surfaces described therein are alkylated whereas some surfaces (specifically surfaces produced using peroxide-type radical initiators) primarily, or additionally, contain Si-O-C(O)-R linkages. Thus, it is clear that merely attaching an organic layer to a silicon surface (as described in the cited references) does not inherently result in an electrical structure wherein an electrical property of the electrical structure is significantly improved compared to a same structure without the organic layer.

5. I further declare that all statements made herein of knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, or imprisonment, or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

7/31/03

Date

Nathan S. Lewis

Nathan S. Lewis

Attachment: Exhibit A To Declaration



Exhibit A

